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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/030,176

01/31/2002

Hideaki Shoji

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07/21/2004

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EXAMINER

ADDY, ANTHONY S

ART UNIT

PAPER NUMBER

2681

6

DATE MAILED: 07/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/030,176

Applicant(s)

SHOJI ET AL.

Examiner

Anthony S Addy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-17 is/are rejected.
- 7) ☒ Claim(s) 2-4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01/31/2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4 4
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1, 5, 6-8 and 11-13 are rejected under 35 U.S.C. 102(e) as being anticipated by **Ying et al., U.S. Patent Number 6,307,511, (hereafter Ying)**.

Regarding claim 1, Ying teaches a portable radio comprising: a casing (see col. 3, line 34 and Fig. 1; where an apparatus housing 12 is shown); a cover attached to said casing so as to be freely opened and closed (see col. 3, line 34 and Fig. 1; where a flip 14 pivotally mounted is shown); a dipole antenna attached to said cover (see col. 5, lines 14-16 and Fig. 6; where a dipole antenna 60 is shown in the flip 14); power supply means for supplying power to said dipole antenna (see col. 3, lines 51-54); open-close detection means for detecting the opening/closing of said cover (see col. 4, lines 24-30

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and Fig. 2; where by means of portions 42 and 44 shown, the antenna may operate when the flip is opened or closed); and power supply control means for controlling said power supply means based upon results of detection of said open-close detection means (see col. 4, lines 24-30, where radio circuitry in the apparatus housing 12 supplies and receives electric currents from the antenna).

Regarding claim 5, Ying discloses all the limitations of claim 1. In addition, Ying teaches a dipole antenna extended in a direction orthogonal to a length direction of casing (see col. 5, lines 16-22).

Regarding claim 6, Ying discloses all the limitations of claim 1. In addition, Ying teaches a dipole antenna with a top end that is bent (see col. 5, lines 30-31 and Fig. 7; where a smaller portion 74 of the printed antenna pattern is given a meander shape).

Regarding claim 7, Ying discloses all the limitations of claim 1. In addition, Ying teaches a dipole antenna with a top end that is bent into a meandering shape (see col. 5, lines 30-31 and Fig. 7).

Regarding claim 8, Ying discloses a portable radio comprising: a casing (see col. 3, line 34 and Fig. 1; where an apparatus housing 12 is shown); a cover attached to said casing so as to be freely opened and closed (see col. 3, line 34 and Fig. 1; where a flip 14 pivotally mounted is shown); a dipole antenna attached to said cover (see col. 5, lines 14-16 and Fig. 6; where a dipole antenna 60 is shown in the flip 14); power supply means for supplying power to said dipole antenna (see col. 3, lines 51-54). Ying, further teaches a dipole antenna 60, comprising a first larger branch 62 as well as a second smaller branch 64 (see col. 5, lines 16-19 and Fig. 6). The larger branch resonates in

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the GSM band, and the smaller branch 64 operates in the DCS and/or PCS band (see col. 5, lines 25-27). The resonator is therefore inherent, since for the antenna to resonate there must be a resonator near the antenna that enables it to resonate between different bands based on whether the cover is open or closed.

Regarding claim 11, Ying discloses all the limitations of claim 8. In addition, Ying teaches a dipole antenna extended in a direction orthogonal to a length direction of casing (see col. 5, lines 16-22).

Regarding claim 12, Ying discloses all the limitations of claim 8. In addition, Ying teaches a dipole antenna with a top end that is bent (see col. 5, lines 30-31 and Fig. 7; where a smaller portion 74 of the printed antenna pattern is given a meander shape).

Regarding claim 13, Ying discloses all the limitations of claim 8. In addition, Ying teaches a dipole antenna with a top end that is bent into a meandering shape (see col. 5, lines 30-31 and Fig.7).

Claim Rejections - 35 USC § 103

3. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ying et al., U.S. Patent Number 6,307,511, (hereafter Ying)** as applied to claim 8 above, and further in view of **Vannatta et al., U.S. Patent Number 6,043,786, (hereafter Vanatta)**.

Regarding claims 9 and 10, Ying teaches a portable radio (see Fig. 2; where a portable electronic communication device is shown). Ying does not teach a resonator comprising a quarter wavelength resonator with one end being short circuited, the other end being opened.

Vannatta, however, discloses a half wavelength resonator in a dielectric material, layered over a quarter wavelength or half wavelength slot in a metal surface. At a certain resonant frequency f_2 , the resonator is magnetically coupled to the slot and a virtual electric short is achieved across the slot (see col. 4, lines 7-12).

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the portable radio of Ying to include the quarter and half wavelength resonators, for the benefit of the antenna being operative in the lower and higher frequency bands when the flip is closed or opened.

4. Claims 14 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ying in view of Dent (U.S. Patent Number 5,423,074).

Regarding claims 14, and 15-17, Ying teaches a portable radio comprising: a casing (see col. 3, line 34 and Fig. 1; where an apparatus housing 12 is shown); a cover attached to said casing so as to be freely opened and closed (see col. 3, line 34 and Fig. 1; where a flip 14 pivotally mounted is shown); a dipole antenna attached to said cover (see col. 5, lines 14-16 and Fig. 6; where a dipole antenna 60 is shown in the flip 14); power supply means for supplying power to said dipole antenna (see col. 3, lines 51-54); open-close detection means for detecting the opening/closing of said cover (see col. 4, lines 24-30 and Fig. 2; where by means of portions 42 and 44 shown, the antenna may operate when the flip is opened or closed). Ying further teaches a dipole antenna extended in a direction orthogonal to a length direction of casing (see col. 5, lines 16-22), a dipole antenna with a top end that is bent (see col. 5, lines 30-31 and Fig. 7; where a smaller portion 74 of the printed antenna pattern is given a meander

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shape), a dipole antenna with a top end that is bent into a meandering shape (see col. 5, lines 30-31 and Fig.7). Ying, however fails to explicitly teach a first and second matching circuits; a first switch which, based upon the result of detection by the open-close detection means, makes a switchover between said first and second matching circuits and said power supply means; and a second switch which, based upon the result of detection by the open-close detection means, makes a switchover between the first and second matching circuits and the dipole antenna.

Dent discloses a matching filter networks and switches (see col. 4, lines 13-28 and Fig. 1; where matching networks 22 & 23 and switches 24 & 25 are shown) that switches between different modes of operation when transmitting different modulated carriers (see col. 3, lines 23-25). The open-close detection of the cover could be interpreted by one of ordinary skill in the art as operating between two modes, therefore one could apply the matching networks and switches to perform the open-close detection of the cover.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the matching filter networks and the switches, as taught by Dent, for the portable radio of Ying for the purpose of switching between the dipole antenna and power supply means, based on the operating mode of the communication terminal to control the power efficiency of the terminal as taught by Dent.

Allowable Subject Matter

5. Claims 2-4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: With respect to claim 2, Ying teaches a radio circuitry means supplying power to the antenna depending on whether the flip is closed or opened.

The instant invention with respect to claim 2, teaches a parallel two-line type power supply line, where the parallel two-line type power supply line is excited in a reversed phase when cover is open and excited in the same phase when the cover is closed. These novel features in combination with the other limitations of claim 2 are not taught nor fairly suggested by Ying nor any of the prior art of record, alone or in combination.

With respect to claim 3, Ying teaches a power supply means (see col. 3, lines 52-55).

The instant invention with respect to claim 3, teaches a power supply means comprising a coaxial line, where the coaxial line is provided with an external conductor and an inner conductor, with external conductor and casing being short-circuited, and excites inner conductor in a state where cover is open, and excites external conductor in a state where cover is closed. These novel features in combination with the other limitations of claim 3 are not taught nor fairly suggested by Ying nor any of the prior art of record, alone or in combination.

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Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sadler et al., U.S. Patent Number 6,011,519 discloses a dipole antenna configuration for mobile terminal.

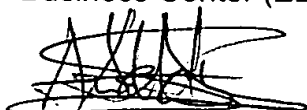
Pye et al., U.S. Patent Number 5,337,061 discloses a high performance antenna for hand held and portable equipment.

Spall, U.S. Patent Number 5,986,609 discloses a multiple frequency band antenna.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony S Addy whose telephone number is 703-305-8487. The examiner can normally be reached on Mon-Fri 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Erika A Gary can be reached on 703-308-0123. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Anthony S. Addy
July 09, 2004


ERIKA GARY
PATENT EXAMINER